ABSTRACT OF DISCLOSURE

A pixel-data selection device providing motion compensation, and a method thereof. A first and a second storage parts store a current frame/field including first pixel-data and a previous frame/field including second pixel-data, respectively, corresponding to at least one of the inputted candidate motion vectors. A first and a second pixel-data extraction parts extract the first and the second pixel-data corresponding to the candidate motion vector, respectively from the first and the second storage parts. A first and a second compensation pixel calculation parts calculate first and second compensation pixel-data for motion compensation, respectively, by adaptively applying a predetermined first weight according to the abstracted first and second pixel-data. Therefore, the first and the second pixel-data can be calculated based on motion trajectories of a current block to be interpolated and peripheral blocks, and thus, block artifacts can be prevented as the motion compensation is performed adaptively.